

Initial	Date
CU	7-29-91
BA	7/29/91
JG?	7-23-91

BA/EN
WR ND
Mail Stop 60190

JUL 29 1991

Memorandum

To: ARD, Refuges and Wildlife (60130)
Attention: Dale Henry

From: **ACTING** Regional Engineer, Region 6

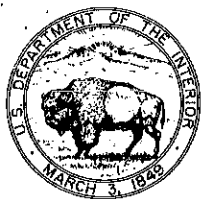
Subject: 1990-1991 Annual Water Use Report/Management Plan

The subject reports for the Tewaukon National Wildlife Refuge complex have been reviewed and approved as submitted. Please note, Storm Lake seasonal use water right is 516 acre-feet and the water rights for Lake Elsie are 522 acre-feet storage and 900 acre-feet seasonal use. Therefore, we don't understand how the Lake Elsie NWR report can reflect a water level of 2850 acre-feet.

Please extend our thanks to Refuge personnel for the timely submission of this report.

/s/ ERNEST D. HUSMANN

bcc: EN rf
Circ rf (2)
RD
EN:LCoe:jj:7-23-91



United States Department of the Interior

FISH AND WILDLIFE SERVICE
TEWAUKON NATIONAL WILDLIFE REFUGE
RR #1, BOX 75
CAYUGA, NORTH DAKOTA 58013



JAN 31 1991

MEMORANDUM

January 30, 1991

To: R&W, Associate Manager ND (60130) *DA*
Denver, CO

From: Refuge Manager, Tewaukon NWR Complex (62660)
Cayuga, ND

Subject: 1991 Annual Water Management Plan and 1990 Use Report

1. List of Water Rights

Declaration of Filing (#1261) dated September 1, 1934, for Lake Tewaukon and East and West White Lake (including Cutler Marsh), 7,198 acre-feet storage, 4,251 acre-feet seasonal from Wild Rice River.

Declaration of Filing (#57) dated September 1, 1934 claimed 397 acre-feet storage and 312 acre-feet seasonal use for Clouds Lake (Pool 8) now calling Hepi Lake. Listed on the same sheet as Lake Tewaukon/White Lake, as per RO(EN) Marshall Fox's 11-14-83 memo.

✓ Tewaukon NWR #1262: 1,130 acre-feet yearly (635 acre-feet storage and 495 acre-feet seasonal use) for Sprague Lake, dated December 1964, diversion from an unnamed creek in the SE1/4NW1/4, Section 2.

✓ Tewaukon NWR #1263: 686 acre-feet yearly for Mann Lake (236 acre-feet) and Horseshoe Slough (450 acre-feet) dated December 1964, diversion from the Wild Rice River.

✓ Tewaukon NWR #3816 Nickeson Tract: 571 acre-feet (474 acre-feet storage, 97 acre-feet annual use) for the Nickeson Bottoms, a tract jointly owned by the ND Game and Fish Department, US Bureau of Reclamation and USFWS. Diversion is from the Wild Rice River, W 1/2 Section 27, T. 130 LTL N., R. 54 W. Priority date August 15, 1985.

2. Water Use - 1990

The Wild Rice River and LaBelle Creek flowed well below average this year. Frenier Dam outlet and Sprague Lake Creek did not flow. Natural wetlands received virtually no inflow and were only about 20% full after spring runoff. Even Type IV wetlands were dry by June.

Pool 1 (Lake Tewaukon): The lake was frozen at 1145.84 (1148.0 is full pool and virtually never is attained in the fall after a summer of evaporation loss). No inflows were received, and the lake peaked at 1147.25 on April 12. Lake Tewaukon froze over completely on November 25 (except for one hole kept open by waterfowl and the aerator).

Parker Bay (east end of Lake Tewaukon): All inflow from LaBelle Creek was diverted into Parker's Bay to raise the water level to benefit waterfowl, and to take pressure off the East Dike of Lake Tewaukon. At years end there was approximately three feet of water in Parker's Bay.

Pool 2 (Cutler Marsh): No inflow was received and Pool 2 went from 1148.5 to 1153.28 on June 13 after we pumped water into it for approximately four days. It dropped to 1146.28, and then on August 20 the water from Pool 3 was released into it to provide a resting area for migratory waterfowl. It reached an elevation of 1147.98 on September 7, 1990.

Pool 2A: 2A received no inflow and went from a depth of 2 feet to being dry by July 15.

Pool 3 (Maka Pool): This pool was at about 1153.65 when spring runoff began. Since it was almost at operating level of 1156.2 it was held at this elevation to provide nesting sites for over water nesters and brood water until August 20 when it was released into Pool 2. Elevation was 1152.59 when release occurred.

Pool 3A: This pool was at same level as Pool 3 and remained that way all year.

Pool 4 (River Pool): All water from Pool 4 was dumped into Pool 3 in early April. The year ended with an elevation of 1154.42

Pool 5, 5A, 6, 7, 7A: Were dry.

Pool 8 (Hepi Lake): This pool was about 2.5 feet deep when spring runoff began and was dry by years end.

Pool 10: This pool was about 3 feet deep in April and held about 8"-10" at freeze-up.

Pool 11 (West White Lake): This unit held about 4 feet of water at the beginning of spring runoff and by years end was down to .5 feet.

Pool 12 (East White Lake): This pool was dry.

Pool 13 (Mann Lake): This pool was dry.

Pool 14 (Sprague Lake): The lake was 7.2 feet deep on April 1 and then slowly evaporated to about 5.5 feet deep at freeze up.

Pool 16 (Horseshoe Slough Group): No water was available for this unit. Four of the eight wetlands were dry and the four that held water were down to 6 to 12 inches by freeze-up.

3. Impoundment Data

Please see the attached chart for capacities for each pool at various elevations. No formal inflow/outflow records were maintained. Please see Section #2 above for elevation changes for the various pools.

4. 1991 Plans

If 1991 is a dry year, we plan to hold all the water we can to maximize waterfowl production in each pool. If we get enough runoff we will attempt to manage the pools as follows:

Pool 1 (Lake Tewaukon): Fill to about 1150.0 MSL to allow flow into adjacent dry wetlands on the Krause WPA, Tewaukon WMA, and the Refuge. After these wetlands have received adequate water, the lake will be lowered to the maximum management level of 1148.0 MSL for sport fishery habitat. The lake may have to be lowered for construction purposes later in the year.

Parker Bay (east end of Lake Tewaukon): Flood to a maximum of four feet as early as possible in the spring before duck nesting occurs. Maintain a 2-1/2 - 3 foot depth for waterfowl production.

Pool 2 (Cutler Marsh): Fill the pool to 1151.5 MSL to flood dense cattails in the west end without killing vegetation in the lower end. When the water temperatures are correct, small amounts of water will be released in May-August to help commercial fishermen net carp.

Pool 3 (Maka Pool): Fill full to approximately 1156.2 and stabilize as quickly as possible before over-water duck nesting is initiated. If needed, supply water to Pools 2A and 3A. Supply water to Nickeson Bottoms as described in the next section. Hold water at maximum depth to slow cattail invasion.

Nickeson Bottoms: Flood to a depth of approximately 4 feet as quickly as possible to kill cattails but still minimize carp invasion. Maintain this depth to continue cattail control and encourage establishment of a muskrat population. Muskrats will further aid in cattail control and their lodges will provide waterfowl nesting and loafing sites.

Pool 4 (River Pool): Refill to 1159.5 to retard cattail invasion and establish muskrat populations.

Pools 2A, 3A, 5, 5A, 6, 7, 7A: If possible, fill to maximum depth to flood cattails. Water from Pool 3 can be used to fill Pools 2A and 3A.

Pool 8 (Hepi Lake): Initially 5-6 feet of water may be needed to supply Pools 7A, 7, 6, 5A, 5, 3A, and 2A downstream. Draw the pool down to 3 feet as soon as possible to maintain cattail and bulrush stands.

Pool 9: If possible keep water out of this pool and allow it to dry up. Drying will allow some cattails to reestablish.

Pool 10: Allow this pool to fill naturally or open the supply ditch control and flood to a maximum of 3 feet. This wetland should be maintained at this level; over-filling would probably flood out the excellent stand of bulrush. It should be allowed to dry down to maintain its highest use as a semi-permanent wetland.

Pool 11 (West White Lake): Maintain depth at 4 to 4-1/2 feet to slow cattail invasion.

Pool 12 (East White Lake): Fill to a depth of 3.5 feet and try to maintain depth at 2.5 feet.

Pool 13 (Mann Lake): Add 3 feet of water to this pool in order to enhance newly established cattails and bulrush stands.

Pool 14 (Sprague Lake): Fill to maximum pool, about 8-1/2 feet in order to maintain the sport fishery.

Pool 16 (Horseshoe Slough): Gravity flow water from the Wild Rice River to fill all pools. Some pumping may be necessary to top these pools off. Pool A should attain the level of 1207.5 MSL and all others about 1206 MSL.

5. Location Map

Please see Section #2 for the revised Refuge Map on which all management pools are marked.



Fred G. Giese

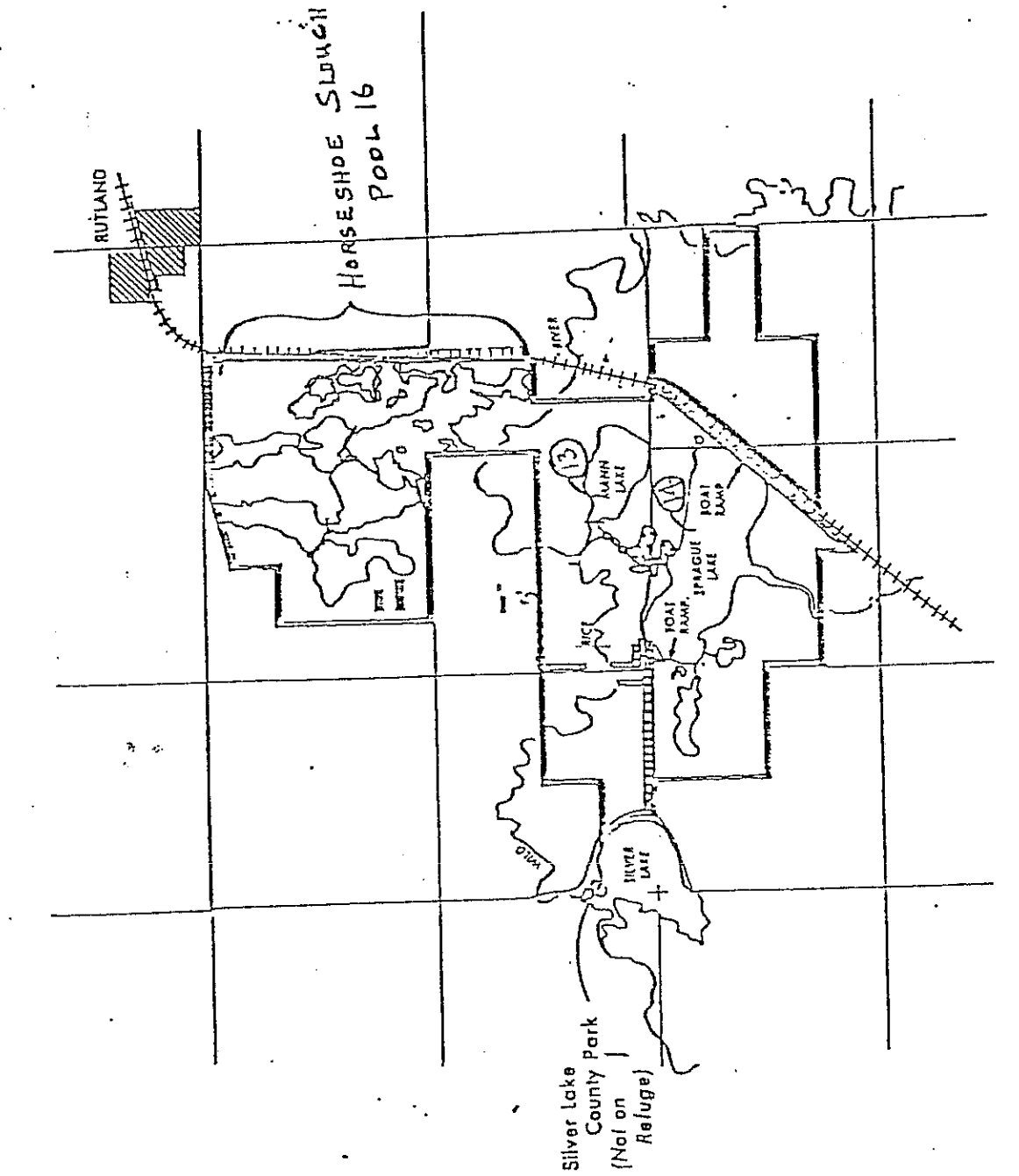
Attachments

This map illustrates the Lake Tewa area, including the lake itself, surrounding trails, and various landmarks. The map is oriented with North at the top. Key features include:

- Lake Tewa:** The central body of water, labeled "LAKE TEWAUKON".
- Trails:** Several trails are marked with numbers 1 through 12, indicating different routes or points of interest.
- Landmarks:**
 - PAICIA LAY** and **PCMC AREA** are labeled near the top of the lake.
 - LAKE Tewa** is labeled on the right side of the lake.
 - LAKE Tewa** is labeled on the left side of the lake.
 - LAKE Tewa** is labeled on the bottom side of the lake.
 - LAKE Tewa** is labeled on the top side of the lake.
 - LAKE Tewa** is labeled on the right side of the lake.
 - LAKE Tewa** is labeled on the left side of the lake.
 - LAKE Tewa** is labeled on the bottom side of the lake.
 - LAKE Tewa** is labeled on the top side of the lake.
- Other Features:**
 - PAICIA LAY** and **PCMC AREA** are labeled near the top of the lake.
 - LAKE Tewa** is labeled on the right side of the lake.
 - LAKE Tewa** is labeled on the left side of the lake.
 - LAKE Tewa** is labeled on the bottom side of the lake.
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 - LAKE Tewa** is labeled on the bottom side of the lake.
 - LAKE Tewa** is labeled on the top side of the lake.

The map also includes a scale bar in miles (1/4, 1/2, 3/4, 1) and a north arrow.

SPRAGUE LAKE UNIT



TEWAUKON NATIONAL WILDLIFE REFUGE
Pools, Elevations and Acres

12/12/85

Pool 1 - Tewaukon	1149	1015
- Parker's Bay	1149	95
Pool 2 - Cutler's Marsh	1152	246
Pool 2A		30
Pool 3 - Maka Pool	1156	125
Pool 3A		18
Pool 4 - River Pool	1159	108
Pool 5	1160	6
Pool 5A		5
Pool 6	1165	6
Pool 7	1178	21
Pool 7A		106
Pool 8 - Hepi Lake	1179	106
Pool 9	1167	10
Pool 10	1173	5.5
Pool 11 - W. White Lake	1151	80
Pool 12 - E. White Lake	1147	103
Pool 13 - Mann Lake	1207	57
Pool 14 - Sprague Lake	1209	186
<hr/>		
Pool 16 - Horseshoe Slough		244
A Pool	1210	119.7
B Pool	1206	42.5
C Pool	1206	10.3
B-West Pool	1206	30.3+
B-North Pool	1206	24.5
C-North Pool	1206	2.8+
C-East Pool	1206	5.5
C-South Pool	1206	9.0

WATER USE REPORT/
MANAGEMENT PLAN
SHORT FORM

Include w/our
response to
water mgmt plan.

Storm Lake NWR, Sargent County
Station Name

June 6
Date of

Declaration of Filing: 8/30/37
Water Right No.

Drainage (acres) (legal)
Source(s)

516 (729 acre-feet storage)
(526 acre-feet seasonal)

Water Diverted: Yes _____ No X

Means of Diversion Uncontrolled ditch
Rate unknown

*Impoundment(s): Yes _____ No X

Water level estimate 654 acre-feet
(Elevation or Est. Storage Amount)

*Well(s):

Free Flowing none gpm
Pumped _____ gpm

Type of Use:

Surface Irrigation _____
(Crop) _____
Fish & Wildlife X virtually no
Stock _____ public use
Domestic _____
Other _____

OVERALL CLIMATIC CONDITIONS: 1990 was dry.

CONDITION OF FACILITIES: A diversion dam at the head of the feeder ditch serving Storm Lake washed out well before 1976. Apparently someone decided it wasn't worth repairing.

PROPOSED WATER PROGRAM: No water management capability is present. Water runs down the ditch into the lake to an unknown degree each spring. Water did not run in 1990 due to heavy snow and ice accumulations in the ditch.

COMMENTS: The lake serves as an excellent waterfowl loafing sanctuary with good use by snow geese, canvasbacks, redheads, lesser scaup, and tundra swans. Water levels fluctuate on their own. If active management was initiated some degree of improvement might be gained by a cycle of drawdown management. It is questionable if the benefits would be worth the costs; further review is planned. The Golf Course Association of Milnor has requested the use of lake water to irrigate portions of the Storm Lake Golf Course and applied for a water right with the ND State Water Commission. The Association was granted a conditional water right junior to that of the FWS and the refuge staff is evaluating the situation.

Fred G. Giese
Fred G. Giese

*If more than one impoundment or well, please attach additional sheet.

WATER USE REPORT/
MANAGEMENT PLAN
SHORT FORM

Lake Elsie NWR, Richland County
Station Name

Summer, 1990 (date not recorded)
Date of Inspection

Declaration of Filing: 8/30/37
Water Right No.

Minor local runoff, at least two
Source(s) drainage ditches, several
springs

522 AF storage
900 seasonal
(729 acre-feet storage)
(526 acre-feet seasonal)

Water Diverted: Yes _____ No X

Means of Diversion None
Rate _____

*Impoundment(s): Yes _____ No X

Water level 2,850 acre-feet
(Elevation or Est. Storage Amount)

*Well(s):
Free Flowing none-known gpm
Pumped _____ gpm

Type of Use:
Surface Irrigation _____
(Crop) _____
Fish & Wildlife XX
Stock _____
Domestic _____
Other high public use: swimming
water skiing, fishing

OVERALL CLIMATIC CONDITIONS: 1990 was relatively dry. Very minor amounts of runoff were received.

CONDITION OF FACILITIES: No facilities present.

PROPOSED WATER PROGRAM: None, no water management capability is present. At maximum, the lake spills north through a (damaged) culvert.

COMMENTS: The lake is an extremely popular summer recreational area.

Fred G. Giese
Fred G. Giese

*If more than one impoundment or well, please attach additional sheet.

1991 Annual Water Management Plan and 1990 Use Report

1. List of Water Rights

Declaration of Filing dated September 1, 1934, for Lake Tewaukon and East and West White Lake (including Cutler Marsh), 7,198 acre-feet storage, 4,251 acre-feet seasonal from Wild Rice River.

Declaration of Filing dated September 1, 1934, for 397 acre-feet storage and 312 acre-feet seasonal use for Clouds Lake (Pool 8) now called Hepi Lake. Water use in pools 5 through 10 is covered under this right, with Hepi Lake to be drawn down to fill these pools.

Permit #1261: 4852 acre-feet storage and 2287 acre-feet seasonal use, for a total of 7139 acre-feet. This permit covers additional storage and seasonal use in Lake Tewaukon, Cutlers Marsh and West White Lake; 409 acre-feet seasonal use to replace water to be diverted from the watershed by a Sargent County Water Conservation District project; and total storage and seasonal use for Pools 3 and 4. Priority date December 28, 1964.

Permit #1262: 1,130 acre-feet yearly (635 acre-feet storage and 495 acre-feet seasonal use) for Sprague Lake, diverted from an unnamed creek in the SE1/4 NW1/4, Section 2. Priority date December 28, 1964.

Permit #1263: 686 acre-feet yearly, for Mann Lake (236 acre-feet) and Horseshoe Slough (450 acre-feet) diverted from the Wild Rice River. Priority date December 28, 1964.

Permit #3816 (Nickeson Tract): 571 acre-feet (474 acre-feet storage, 97 acre-feet annual use) for the Nickeson Bottoms, a tract jointly owned by the ND Game and Fish Department, US Bureau of Reclamation and USFWS. Diversion is from the Wild Rice River, W1/2 Section 27, T. 130 LTL N., R. 54 W. Priority date August 15, 1985.

2. Water Use - 1990

The Wild Rice River and LaBelle Creek flowed well below average this year. Frenier Dam outlet and Sprague Lake Creek did not flow. Natural wetlands received virtually no inflow and were only about 20% full after spring runoff. Even Type IV wetlands were dry by June.